AMENDMENTS TO THE CLAIMS

1-45. (Cancelled)

46. (Currently amended) A method for laser induced breakdown of a biologic material with a pulsed laser beam, the material being characterized by a log-log relationship between fluence threshold at which breakdown occurs versus laser pulse width, the relationship exhibiting a change in slope, at a characteristic laser pulse width, said method comprising the steps of:

a. generating at least one laser pulse which has a pulse width equal to or less than said characteristic laser pulse width and a fluence greater than 5 J/cm^2; and

b. providing a path by which said pulse is directed toward the surface of the material.

47. (Amended) The method according to claim 46 wherein the pulse width is in the range of from about 10 to about 10,000 femtoseconds, and wherein the pulse has an energy of from about 1 nanojoule to about 1 microjoule.

48. (Previously presented) The method according to claim 46 wherein the spot size is variable within a range of from about 1 to about 100 microns by changing the f number of the laser.

49. (Previously presented) The method according to claim 46 wherein the spot size is variable within a range of from about 1 to about 100 microns.

50. (Previously presented) The method according to claim 46 wherein the material is transparent to radiation emitted by the laser and the pulse width is from about 10 to about 10,000 femtoseconds and wherein the pulse has an energy of from about 10 nanojoules to about 1 millijoule.

51. (Previously presented) The method according to claim 46 wherein the pulse width is from about 10 to about 10,000 femtoseconds and wherein the pulse has an energy of from about 10 nanojoules to about 1 millijoule.

52. (Currently amended) A method for laser induced breakdown of a biologic material with a pulsed laser beam, the material being characterized by a log-log relationship of fluence threshold at which breakdown occurs versus laser pulse width, the relationship exhibiting a substantially negative change in slope, with respect to decreasing pulse width, at a predetermined laser pulse width where the onset of plasma induced breakdown occurs, said method comprising the steps of:

a. generating a laser beam including at least one laser pulse which has a pulse width equal to or less than said predetermined laser pulse width, and has a fluence greater than 5 J/cm^2; and

b. providing a path by which said pulse is directed toward the surface of the material so that the laser beam defines a spot and has a lateral gaussian profile characterized in that fluence at or near the center of the spot is greater than the threshold fluence whereby the laser induced breakdown is ablation of an area within the spot.

53. (Previously presented) The method according to claim 52, wherein the spot size is a diffraction limited spot size providing an ablation cavity having a diameter less than a fundamental wavelength size.

54. (Currently amended) A method for laser induced breakdown of a biologic material with a pulsed laser beam, the material being characterized by a relationship of fluence threshold at which breakdown occurs versus laser pulse width that exhibits a change in slope to a slowly varying threshold value at a predetermined laser pulse width where the onset of plasma induced breakdown occurs, said method comprising the steps of:

a. generating a pulsed laser beam including at least one laser pulse which has a pulse width equal to or less than said predetermined laser pulse width, and has a fluence greater than 5 J/cm^2; and

b. providing a path by which said pulse is directed toward the surface of the material, wherein the pulse width is in a range of from about 10 to about 10,000 femtoseconds and wherein the beam has an energy in the range of from about 10 nanojoules to about 1 millijoule.

55. (Currently amended) A method for laser induced breakdown of a biologic material by plasma formation with a pulsed laser beam, the material being characterized by a relationship of fluence threshold at which breakdown occurs versus laser pulse width that exhibits a change in slope at a characteristic laser pulse width, said method comprising the steps of:

a. generating at least one laser pulse which has a pulse width equal to or less than said characteristic laser pulse width, said characteristic pulse width being defined by the log ablation threshold of the material as a function of log pulse width position where the ablation threshold function is no longer proportional to the square root of pulse width, and has a fluence greater than 5 J/cm^2; and

b. providing a path by which said pulse is directed toward the surface of the material so as to induce breakdown by plasma formation in the material.

56. (Previously presented) The method according to claim 55 and further including:

a. identifying a pulse width start point;

b. focusing the laser beam initial start point at or beneath the surface of the material; and

c. scanning said beam along a predetermined path in a transverse direction.

57. (Previously presented) The method according to claim 55 and further including:

a. identifying a pulse width start point;

b. focusing the laser beam initial start point at or beneath the surface of the material; and

c. scanning said beam along a predetermined path in a longitudinal direction in the material to a depth smaller than the Rayleigh range.

58. (Previously presented) The method according to claim 55 wherein the breakdown includes changes caused by one or more of ionization, free electron multiplication, dielectric breakdown, plasma formation, and vaporization.

59. (Previously presented) The method according to claim 55 wherein the breakdown includes plasma formation.

60. (Currently amended) A method for laser induced breakdown of a biologic material with a pulsed laser beam, the material being characterized by a log-log relationship between fluence threshold at which breakdown occurs versus laser pulse width, the relationship exhibiting a change in slope, at a characteristic laser pulse width, said method comprising the steps of:

a. generating at least one laser pulse which has a width equal to or less than said characteristic laser pulse width where the laser pulse width is in a range of from about 10 to about 10,000 femtoseconds, the pulse has an energy of from about 10 nanojoules to about 1 millijoule, and the pulse has a fluence greater than 5 J/cm^2; and

b. providing a path by which the pulse is directed toward the surface of the material.

61. (Currently amended) A method for laser induced breakdown of a biologic material with a pulsed laser beam, said method comprising the steps of:

a. generating a pulsed laser beam including at least one laser pulse having a pulse width equal to or less than a characteristic pulse width, the characteristic pulse width defined by a region of a log-log relationship between breakdown fluence threshold versus laser pulse width, for said biologic material, which exhibits a departure from a square root dependence, and having a fluence greater than 5 J/cm^2; and

b. providing a path by which said pulse is directed toward the surface of the material.

62. (Currently amended) The method according to any of claims 46, 52, 54, 55, 60, and 61 comprising scanning the beam along a predetermined path beneath the surface of the material to induce laser induced breakdown therein.

63. (Currently amended) The method according to any of claims 46, 52, 54, 55, 60 and 61 comprising laser induced breakdown in a spot without adversely affecting peripheral areas adjacent to the spot.

64. (Previously presented) The method according to any of claims 46, 52, 55 and 61 wherein the beam comprises one or more pulses with pulse width in the range of 10 femtoseconds to 10 picoseconds.

65. (Previously presented) The method according to any of claims 46, 52, 55 and 61 wherein the beam comprises one or more pulses with pulse energy in the range of 1 picojoule to 1 joule.

66. (Previously presented) The method according to any of claims 46, 52, 54, 55, 60 and 61 wherein the repetition rate is between one pulse per second and 100 million pulses per second.

67. (Previously presented) The method according to any of claims 46, 52, 54, 55, 60, and 61 wherein the beam comprises one or more pulses with a wavelength within at least one of the following ranges: 100 nm to 200 nm, 200 nm to 300 nm, 300 nm to 700 nm, 700 nm to 7000 nm, 1000 nm to 1100 nm, 1100 nm to 1400 nm, 1400 nm to 1600nm, 1600nm to 2000 nm.